REMARKS

Presently, claims 102-143 are pending in the application. A Request for Continued Examination ("RCE") under 37 C.F.R. §1.114 is being filed herewith. Independent claims 102, 108 and 117 have been amended to more clearly recite and particularly point out the present invention. Support for the amendments to claims 102, 108 and 117 may be found, for example, at page 29, line 28 – page 32, line 1 and at page 33, line 21 – page 34, line 9 of the specification. Dependent claims 104, 111, 113, 115, 120, 122 and 124 have been amended to be consistent with claims 102, 108 and 117, respectively, as amended, and to correct formal errors noted by Applicants. New dependent claims 126-143 have been added to depend from and further define the inventions of independent claims 102, 108 and 117, respectively. Support for the features of new dependent claims 126-136 may be found, for example, in claims 102, 108 and 117, and at page 29, line 28 – page 32, line 1 and at page 33, line 21 – page 34, line 9 of the specification. Accordingly, no new matter has been added to the application by the foregoing amendments.

Descriptions of the prior art references discussed herein may be found in Applicants' previous Amendments filed in this application on April 25, 2005 and September 7, 2005, which are incorporated herein by reference.

Response to Examiner's Arguments

Applicants respectfully, but strenuously, disagree with the Examiner's reading of U.S. Patent No. 6,177,931 to Alexander *et al.* ("Alexander"), including the Examiner's continued assertion that Alexander teaches the application and/or use of "heuristic rules." At no point does Alexander even discuss "heuristic rules".

1. Ordinary Meaning of "Heuristic Rules"

Absent a clear definition in the specification, the words of a claim must be given their plain meaning. "'[T]he ordinary and customary meaning of a claim term is the

meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.' *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) (*en banc*)...The ordinary and customary meaning of a term may be evidenced by a variety of sources..., including: the claims themselves...dictionaries and treatises...and the written description, the drawings, and the prosecution history." *See* MPEP 2111.01.

The ordinary meaning of the term "heuristic" is "involving or serving as an aid to learning, discovery or problem solving by experimental and esp. trial-and error methods; *also*: of or relating to exploratory problem-solving techniques that utilize self-educating techniques (as the evaluation of feedback) to improve performance" (*Webster's New Collegiate Dictionary*, 9th ed.). Thus, one skilled in the art would understand the term "heuristic rules" to mean one or more rules that are determined from learning, discovery, experiments, trial and error, inferences, educated guesses, market studies, human knowledge, experience or calculations. Such concepts are fully supported in the present application, for example, at the second full paragraph on page 13 and at pages 26-29 of the specification, as well as Figs. 10A and 10B in the drawings, where the concept of applying "heuristic rules" in the present application is explained and exemplified. Based on the description and use of the term "heuristic rules" in the specification, Applicants further submit that the term "heuristic rules" and the application thereof as used in the present application is consistent with the ordinary meaning of the term as known to one skilled in the art. Accordingly, one skilled in the art would recognize that Alexander does not teach or suggest the use of "heuristic rules" as recited in the present claims.

2. Alexander teaches Statistical Analysis – not Heuristic Rules

Alexander utilizes a "Profile Program" that "performs multiple levels of sophisticated analysis and learning involving numerous comparisons...to develop of multi-dimensional profile of the viewer" (Alexander, column 30, lines 1-7). However, the data used by the Profile Program in Alexander is based on a "simple statistical

analysis" and "basic viewer profile data" (see column 29, lines 36-37 and lines 55-57 of Alexander). The "statistical analysis" used by Alexander's Profile Program to develop the viewer profile does not apply rules that are based on "exploratory problem-solving techniques that utilize self-educating techniques." Thus, the use of statistical analysis to generate information (e.g., the viewer profile) is different than using *heuristic rules* to develop similar types of information.

Although Alexander indicates that the "Profile Program 'learns' to recognize a finer breakdown about the various types of data collected...," such a statement does not teach that heuristic rules are being applied (see column 29, lines 55-59). Rather, the above passage of Alexander simply suggests that the Profile Program is equipped to finely analyze the collected data such that specific interaction data of an individual user may be compared to ascertain a pattern for that viewer. Such fine statistical analysis does not teach or suggest the development, use or application of a heuristic rule.

Moreover, Alexander's statistical approach is based purely on a mathematical analysis, whereas heuristic rules are rules that are used to infer or derive something from the data that could not be calculated, determined or observed directly from a statistical (or other) analysis of the data. Stated differently, heuristic rules inherently include some non-mathematical operation or element. The fact that Alexander discloses that the viewer characteristics that form the viewer profile are developed "over time," and "with sufficient data," is consistent with the use of statistical analysis, but not necessarily with heuristic rules. That is, although the development and/or application of heuristic rules may include some mathematical analysis, such elements are not *essential* to a heuristic rule. Simply because the conclusion resulting from the application of one type of analysis (e.g., statistical) and heuristic rules is the same, does not mean that the type of analysis is the same. Thus, the mere fact that Alexander's discussion of the Profile Program includes examples of how statistical analysis and the various data points utilized therein are applied, does not disclose, teach or suggest the use of "heuristic rules".

3. <u>The Examiner has Misconstrued Examples in Alexander and the Present Application</u>

Applicants respectfully submit that the Examiner has misconstrued Alexander and Applicants' application and the examples related to heuristic rules provided therein.

The Examiner argues that Alexander's teaching of the ability to "determine" whether a viewer is a fan of a particular team is, in fact, the application of a heuristic rule (see page 10 of the Office Action). The Examiner reasons that in Alexander, "a 'heuristic rule' is applied that if viewers frequently watch the Boston Red Sox then they are *statistically* likely to be Boston fans," (emphasis added) and concludes that such analysis is analogous to Applicants' example in Fig. 10A of the present application that an individual who watches "Days of Our Lives" is *statistically* likely to be a housewife.

Initially, Applicants respectfully point out that, as discussed above, a heuristic rule is not the application of some <u>statistical analysis</u> of a behavior. Additionally, the Examiner draws an unfounded conclusion that Alexander's example of determining that a viewer is a fan of a particular team is the application of a heuristic rule. On the contrary, the Examiner acknowledges that such a conclusion in Alexander is made on a *statistical* basis. Implicitly, such a conclusion does not, therefore, teach a heuristic rule.

Furthermore, the Examiner has incorrectly equated the determination that a viewer is a housewife with the determination that a viewer is a "Days of Our Lives" fan. As explained in Applicants' specification, one example of a heuristic rule is that "Days of Our Lives" is watched generally by housewives (see Fig. 10A). The application of a heuristic rule to obtain the conclusion that the viewer is a housewife, is different than simply concluding, <u>based on observation and/or analysis</u> (e.g., statistical) of a consumer's <u>behavior</u>, that the consumer "likes" or "is a fan of" a particular program, as in Alexander. Rather, the application of a heuristic rule might not rely on any type of statistical analysis of the processed data. Therefore, since applying a heuristic rule is a different analysis of the data, such application has the potential to reach a different conclusion and/or obtain different types of information.

Prior Art Rejection – § 103(a)

The Examiner has rejected claims 102-125 under 35 U.S.C. §103(a) as being unpatentable over Alexander in view of U.S. Patent No. 6,446,261 to Rosser ("Rosser"). The Examiner contends that Alexander discloses all elements of the present invention, with the exception of inferring the number of people in a household. The Examiner further argues that Rosser teaches this feature, and concludes that it would have been obvious to one skilled in the art to combine the teachings of Alexander and Rosser to result in Applicants' claimed invention. Applicants respectfully traverse this rejection.

Rosser teaches a live video insertion system that includes a viewer usage profile generator 74. The profile generator accumulates a history of the user's video viewing, such that the pattern of viewing may be used to predict profile factors of interest to direct market advertisers. Rosser teaches that, by monitoring the type(s) of programs that were viewed, in addition to the general pattern of a user's viewing, additional profile analysis is possible, including predictions of age, gender and income.

Applicants' claimed invention includes monitoring viewer interactions (or lack thereof) with a multimedia device and then obtaining certain interaction data about the viewer based on those observed or collected interactions. Heuristic rules that may be composed of both logical heuristic rules and heuristic rules expressed in terms of conditional probabilities are applied and relate viewer interaction data to the number of people in the household, such that the number of people in the household may be inferred. Such an inference or relationship cannot be determined or observed directly from the viewer interaction data.

Independent claim 102 recites:

> In a video network, a computer-implemented method of
> determining the number of people in a household, the method
> comprising:
>
> (a) monitoring viewer interactions with a multimedia device;

(b) processing the viewer interactions to obtain viewer interaction
data corresponding to the viewer interactions;

(c) <u>applying one or more heuristic rules to at least a subset of the
viewer interaction data, wherein the heuristic rules relate at least
one aspect of the viewer interaction data to the number of people in
the household</u>; and

(d) <u>inferring the number of people in the household from the
viewer interaction data based on the application of the heuristic
rules, wherein the number of people in the household is not
directly observable from the viewer interaction data.</u>

To establish a *prima facie* case of obviousness, three basic criteria must be met.
First, there must be some suggestion or motivation, either in the references themselves or
in the knowledge generally available to one of ordinary skill in the art, to modify the
reference or to combine reference teachings. Second, there must be a reasonable
expectation of success. Finally, the prior art reference (or references, when combined)
must teach or suggest all of the claim limitations. *See* MPEP 2143.

Applicants respectfully submit that the combination of Alexander and Rosser,
even if proper, fails to teach or suggest all of the features of independent claim 102. As
the Examiner acknowledges, Alexander does not disclose "<u>inferring the number of people
in the household.</u>" Additionally, as discussed above, Alexander does not teach or suggest
the use or application of <u>heuristic rules</u>, and certainly does not disclose the use of
heuristic rules that "relate at least one aspect of the viewer interaction data to the number
of people in the household...wherein the number of people in the household is <u>not</u>
<u>directly observable</u> from the viewer interaction data," as recited in independent claim
102.

Rosser also does not teach or suggest the use or application of heuristic rules.
Rosser merely teaches that certain a user's profile factors can be predicted by observing a
pattern of the user's viewing in conjunction with the particular types of programming
being viewed. Not only is Rosser silent with respect to exactly how such predictions are

made, and thus does not explicitly teach or suggest the use of heuristic rules to obtain such predictions or profile factors, but Rosser's reliance on the *pattern* of the user's viewing teaches away from the use of heuristic rules to obtain the noted characteristics. Rather, such a scheme as in Rosser speaks generally to a statistical analysis of the collected or observed data – not the application of heuristic rules. Moreover, Rosser does also not teach or suggest that the number of people in the household that is inferred from the viewer interaction data is "not directly observable from the viewer interaction data," as recited in independent claim 102.

Since neither Alexander nor Rosser teach or suggest inferring the number of people in the household through the use of heuristic rules that "relate at least one aspect of the viewer interaction data to the number of people in the household...wherein the number of people in the household is not directly observable from the viewer interaction data," Applicants respectfully submit that the combination of Alexander and Rosser does not teach or suggest all of the features of independent claim 102.

Accordingly, Applicants respectfully submit that the Examiner has not met the burden of *prima facie* obviousness, since the Examiner has not pointed to an objective teaching or combination of references which disclose Applicant's claimed invention. That is, even assuming that Alexander and Rosser were properly combinable, not all of the limitations of independent claim 102 would be taught. Thus, independent claim 102 is believed to be allowable over the combination of Alexander and Rosser.

Independent claim 108 and independent claim 117 recite "applying one or more heuristic rules to at least a subset of the viewer interaction data...wherein the heuristic rules relate at least one aspect of the viewer interaction data to the number of people in the household; and inferring the number of people in the household...based on the application of the heuristic rules, wherein the number of people in the household is not directly observable from the viewer interaction data." For the same reasons discussed above with respect to independent claim 102, even if properly combinable, the combination of Alexander and Rosser does not teach or suggest all of the features of

independent claims 108 and 117. Accordingly, independent claims 108 and 117 are believed to be allowable over the combination of Alexander and Rosser.

Dependent claims 103-107, 109-116 and 118-143 are allowable at least by their dependency on independent claims 102, 108 and 117, respectively. Reconsideration and withdrawal of the Examiner's obviousness rejection of claims 102-125 are respectfully requested.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that the Examiner's rejections have been overcome, and that the application, including claims 102-143, is in condition for allowance. Reconsideration and withdrawal of the Examiner's rejections and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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